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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,228	10/11/2000	Craig H. Barratt	015685.P019C	2662

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EXAMINER

GESESSE, TILAHUN

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 11/29/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

TIR

Office Action Summary

Application No.

09/689,228

Applicant(s)

BARRATT ET AL.

Examiner

Tilahun B Gesesse

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 6-13 and 18-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: drawings have not been reviewed by draftperson.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed August 21, 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

2. The disclosure is objected to because of the following informalities:

The disclosure has provided some patent applications that relates to the present application, however, applicant fails to provide all, for instance, referring to page 13, 14 and 16 these relevant application numbers are not known. Appropriate correction is required.

Claim Rejections - 35 USC § 103.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parish et al (6,037,898) in view of Sato et al (us 5,745,858).

As to claim 1, Parish et al disclose a method for transmitting a downlink signal from a communication station to one or more subscriber units, see col. 7 lines 8-10, the communication

station (see fig. 1) including an array of antenna elements (103), each antenna element coupled to an associated transmit apparatus (113) having an input (115) and an output (109), the coupling of each antenna element being to the output of its associated transmit apparatus, the associated transmit apparatus inputs coupled to a signal processor, see fig. 1.

Parish et al for each particular signal processing procedure of a set of different signal processing procedures, each of the signal processing procedures being for processing the downlink signal to form a plurality of processed downlink antenna signals, see col. 7 lines 10-30, each of signal processing procedures including weighting the downlink signal in phase and amplitude according to a corresponding weight vector, each processed downlink antenna signal having an intended antenna element in the array, see col. 8 lines 50-64.

Parish et al disclose processing the downlink signal according the particular signal processing procedure to form a particular plurality of processed downlink antenna signals, (109), see fig. 1.

Parish et al disclose transmitting the downlink signal by passing each processed downlink antenna signal of the particular plurality of processed downlink antenna signals to its intended antenna element through the intended antenna element's associated transmit apparatus, see col. 8 lines 50-64.

Parish et al, however, fail to disclose the processing procedures designed to achieve a desirable radiation level at any location in a desired sector during the step transmitting downlink signal. Sato et al disclose a base station transmitter with plurality of antennas and signal processing circuit is connected to the antennas and antennas are oriented in each sector and radiated radio transmission signals, see abstract. In view of Sato et al. it would have been

obvious to one of ordinary skill in the art at the time of invention was made to modify the designed set of different signal processing procedures, to achieve a desired radiation level at any location in a desired sector during transmitting downlink signal of Parish with teaching of Sato, so that the transmitting signal radiate to the particular sector increases the signal strength and minimizes interference into the signal.

5. Claims 2-5 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parish et al in view of Sato et al as applied to claim 1 above, and further in view of Dent (us 5,708,971).

As to claim 2, Parish et al in view of Sato et al fail to teach the desired radiation level is a non-null level. Dent, however, teaches the signal processing unit maintains a matrix of phasing and scaling ---non-null entries, see cols 12-13 lines 65-68 and 25-33 respectively. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify Parish et al in view of Sato et al in disclosing non-null , as disclosing by Dent, so that the radiation level has certain value in the degree as being radiate to the desired sector.

As to claims 3-4, Parish et al in view of Sato et al fail to disclose the desired sector range of azimuths. However, Dent discloses antennas could be more or less densely provided or could have a more or less restricted azimuth so that more or fewer than three antennas could receive significant signal components from the source, see col. 13 lines 26-28. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify Parish et al in view of Sato et al in disclosing less restricted azimuth, as disclosed by Dent , so that signification signal received, the same applies in the downlink section of the communication device.

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As to claim 5, Parish et al disclose the signal processor includes a programmable processor and each of the signal processing procedures running a set of programming instructions in the program

(The transmit and receive electronics, (elements 113 and 121, respectively) may be implemented using analog electronics, digital electronics, or a combination of the two. Signal processors 119 and 123 may be static (always the same), dynamic (changing depending on desired directivity), or smart (changing depending on received signals), and in the preferred embodiments are adaptive. Signal processors 119 and 123 may be the same one or more DSP devices with different programming for the reception and transmission, or different DSP devices, or different devices for some functions, see col. 8 lines 34-44).

As to claims 14 and 17, Parish et al disclose the communication station is part of a FDMA/TDMA system, see 47-51.

As to claim 15, Parish et al in view of Sato et al fail to disclose GSM system . however, Dent disclose GSM system, see col.10 lines 31-35. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify Parish et al in view of Sato et al in disclosing the GSM system, so that the communication station can operate in GSM protocol in addition to the TDMA/FDMA protocol.

As to claim 16, parish et al disclose a cellular system using the “personal Handyphone System (PHS), see col. 9 lines 11-16.

Allowable Subject Matter

6. Claims 6-13 and 18-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. *Any response to this action should be mailed to:*

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

*(703) 305-9508 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")*

*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington,
VA., Sixth Floor (Receptionist).*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun Gesesse whose telephone number is (703) 308-5873.. The examiner can normally be reached on Monday-Friday from 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost, can be reached on (703) 308-5318. The fax phone number for this Group is (703) 308-6306 or (703) 308-6296.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Nov. 16, 2001

Tilahun Gesesse


WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600